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## Obituary.

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By the death of Dr. Thomas Thomson the Society has lost one of the earliest and most energetic of Trans-Himalayan explorers, and the first who put into a connected form a really scientific account of the geography, geology, and botany of the vast and complicated mountain regions extending from the plains of the Punjab to Turkistan.

Dr. Thomson was eldest son of Dr. Thomas Thomson, F.R.S., the eminent Professor of Chemistry in the University of Glasgow; in which city the son was born on the 4th of December, 1817. He was educated at the High School and University of Glasgow, and took his degree there as Doctor of Medicine in 1839. At school he obtained very high honours in classics and mathematics, but throughout his college career he preferred to devote his energies to scientific studies. From early childhood he evinced a remarkable love of, and capacity for, science, both physical and biological, commencing with chemistry and mineralogy before he went to school, and at a later period devoting himself to conchology and entomology, and lastly botany.

When only seventeen years of age, he was, when geologising on the Firth of Clyde, the first discoverer and the describer of those beds of fossil mollusca on which so much of the evidence of the glacial era depends. His account of the position and character of the deposits at Dalmuir is written with the acuteness, fulness, and perspicuity of a trained geologist; and the deductions he draws from a comparison of their contents with those of the neighbouring seas, show singular powers of generalisation for so young a person. He states in this paper that though the species are identical with those existing in the Clyde, the proportion of common to scarce is completely inverted: whence he concludes that they cannot have been deposited during a period when the fauna of the Firth of Clyde was in every way the same as at present;

but that they are referable to a very late Tertiary period, when the banks of the Clyde, at least as far as Glasgow, were covered by an arm of the sea.\*

It was his father's wish that he should make chemistry the profession of his life, and, to this end, for many years he worked a little daily at the University Laboratory, finally spending a winter at Giessen under Liebig, who regarded him as one of his most promising pupils, and under whom he discovered pectic acid in carrots.

On entering the medical classes, however, he returned to botany, under the stimulating lectures of the late Sir William Hooker, attending his course and herborizations annually during the whole of his medical curriculum, being further encouraged thereto by his friend, now Sir Joseph Hooker, who had been his school-fellow, and was afterwards his constant college companion. After taking his degree, being determined to devote his life to science, and especially to botany, he resolved upon entering the service of the Honourable East India Company as an assistant-surgeon. On his arrival in Calcutta, early in 1840, he was appointed to the Curatorship of the Museum of the Asiatic Society, and had commenced the arrangement of its fine collection of minerals, when he was ordered off to take charge of a party of European recruits who were being sent to Affghanistan. Leaving Calcutta in the beginning of August, it was not till June of the following year that this long up-country march was concluded; he then arrived at Cabool, where, and at Ghuznee, three months of thorough enjoyment were spent in studying the geology of the country and in exploring a wholly unknown flora.

At Ghuznee he was attached to the 27th Regiment of Native Infantry, and had his first attack of fever, soon to be followed by the horrors of the Affghan campaign, of which he was one of the few survivors. Very shortly after he had quitted Cabool, the detachment left there was destroyed, excepting a few of its officers and men who fled to Ghuznee, where, along with Thomson's detachment, they were beleaguered during the winter of 1841-2, and where, after daily losses of their comrades by cold, sickness, starvation, and the enemy's fire, they capitulated, to

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\* The title of young Thomson's paper is, "On a Deposit of recent Marine Shells at Dalmuir, Dumbartonshire," 'Records of General Science,' vol. i. p. 131, February, 1835. This paper was published four years before that of Smith of Jordan Hill, on "Marine Beds resting on Till," which appeared in 1839 in the 'Memoirs of the Wernerian Nat. Hist. Soc.,' vol. viii. p. 49, wherein an allusion is made to Thos. Thomson's discovery.

be subsequently imprisoned by their treacherous and savage captors. From Ghuznee Dr. Thomson and his fellow prisoners were afterwards sent to Cabool, and from thence were being transported to Bokhara to be sold into slavery; but, on their arrival at Bameean, they bribed their captor, for a ransom of 2000*l.* and a pension for life from the British Government, to conduct them back to the advancing British army of relief.

From Affghanistan Dr. Thomson returned to India, having lost all his collections and personal effects, and was stationed with his regiment at Moradabad till 1845, when he joined the army of the Indus, and served with it throughout the Sutlej campaign; after which he returned to Moradabad, and was stationed at Lahore and Ferozepore till 1847. During this period he was always engaged in investigating the botany of the plains and outer Himalayas. Meanwhile Sir W. Hooker and other friends were actively exerting themselves to procure for him some scientific employment in India, which resulted in his being nominated one of three Commissioners appointed to lay down the territorial boundary between the Trans-Himalayan possessions of our ally the Rajah of Kashmir and the Tibetan provinces subject to China. The Commissioners were instructed, after so doing, to proceed to Léh, there to separate and travel each in such a direction as should seem to him most conducive to advancing our knowledge of the countries north of the Himalayas.

The Commissioners, consisting of Major Cunningham, of the Bengal Engineers, Captain Henry Strachey, and Dr. Thomson, left Simla early in August 1847, and followed the Sutlej valley to the Chinese frontier at Shipki, where they were to have met the Chinese Commissioners, who, however, did not appear. Permission to cross the frontier being refused, the party proceeded to Léh, where it arrived in October. Here Major Cunningham left for Kashmir, bent on archæology; Thomson, bent on geology, botany, and geographical discovery, proceeded northwards, crossed from the Indus to the Nubra valley, and traced the course of the Shayok to its confluence with the Indus, which he followed to Iskardo. Subsequently Captain Strachey also left on his journey south-eastward to the Mansarowar Lake. In December Thomson attempted to reach Kashmir by Dras, but, after severe suffering from cold and exposure, he, on arriving at Dras, found the Zoji La Pass closed, and was obliged to return to Iskardo, where he passed the remainder of the winter of 1847-8.



Early in the following spring, he attempted to trace the Indus downwards to its exit in the plains; but, on reaching Rondu, was prevented from proceeding further by the disturbed state of the valley. It is remarkable that no European has as yet followed this part of the Indus, which was for the first time explored only two years ago by a native in the service of the Trigonometrical Survey as related in another part of this Address. Returning to Iskardo, he again took the route to Kashmir, which he reached in April, and spent some months in studying the botany and geology of the valley, after which he returned to Léh, by Jamu, Kishtwar, and Zanskar. From Léh he set out on a more extended exploring expedition northward, with the object of ascending the previously unsealed Kuen-lun Mountains, which separate Tibet from Eastern Turkistan. This he accomplished by following the valley of the Shayok River to its source at the Karakoram Pass, 18,200 feet above the sea, which he reached on the 19th of August, 1848. Dr. Thomson's return to India was made by Léh, Kashmir, and Jamu, at which last place he was detained for a considerable time by the unsettled state of the country during the second Sikh war.

The results of these extensive journeys were published after Dr. Thomson's return to England, in a narrative form, entitled, 'Western Himalayas and Tibet,' a work on which the President of this Society, Sir Roderick Murchison, when presenting the Founder's Medal to its author, pronounced the following eulogium: "Eminent among living naturalists, Dr. Thomson, in the course of his arduous expedition, in which botany was his chief object, traversed a large tract of wild and mountainous country hitherto unexplored, crossed, for the first time, the dividing range of the great Asiatic continent, brought back collections that link the labours of the Russian botanists in the north with those of the English in the south, and carefully laid down every feature in the physical geography and geology of the vast elevated region whence the Indus and its tributaries take their rise, amid glaciers and at enormous heights above the sea. Another rare merit is that he embodied these researches in a work which, whether for modesty of style, accuracy, as well as breadth of view, or as being the first to demonstrate the true physical structure of the mountain-masses of North-Western India, and to trace their water-systems, climate, and productions, must be considered as of the highest value by naturalists, geographers, and geologists. To Dr. Thomson we owe the abandonment of an idea long prevalent—that Tibet was an

elevated plain or plateau; and with this fell also many subsidiary theories relating to the snow-line, glaciérs, temperature, and climate, of Central Asia. In short, from the date of Thomson's researches, rational superseded conjectural geography as regarded that vast, and still to a great extent unexplored, area." . . . "Now, when I inform you, my associates, that for all these devoted and important services Dr. Thomson never received any reward, nor even public thanks, but, on the contrary, was left to publish his work at his own cost and to his heavy loss, you will all rejoice with me that, although we have much too long delayed our gift, we have at last placed ourselves in a befitting position by rendering justice and all honour to such a distinguished man."

On returning to India he was stationed at Ferozepore, and six months leave were allowed him to draw up his reports, and to put in order his immense collection for transmission to England. During this time, which under any circumstances was wholly insufficient for the purpose, he was repeatedly prostrated by fever. Being unable to obtain a prolongation of leave, he determined to take his furlough—to which he was entitled by length of service—and repair to Simla, where he recovered his health and completed his report. At Simla he added greatly to his botanical observations and collections.

Before leaving India for England, he determined to visit his old friend, Dr. (now Sir Joseph) Hooker, who had been travelling in the Eastern Himalayas while he was in the Western. On reaching the plains he was again attacked by fever of a virulent type, during a stay at the Botanic Gardens of Sahampore; and from the effects of this fever on a constitution already enfeebled by previous illness and great hardships he never completely recovered. He arrived at Darjeeling, in the Sikkim Himalayas, in the winter of 1848, to find his friend a prisoner in the power of the Sikkim Rajah, from which he did not escape till some weeks after his arrival.

The prospect of a year's travelling with one whose pursuits so entirely accorded with his own tastes, induced him to abandon his intention of returning to England. He endeavoured, through that friend's interest with the Governor-General, to obtain an extension of leave for the purpose of spending a year in scientific explorations; but the powers that then ruled India had no sympathy with science; medical officers were scarce, and no concession was obtainable. Dr. Thomson, therefore, resolved to remain on his own

resources, with the certain loss of a year's service, trusting that on his return to England a more liberal view of his disinterested labours would be taken by the Court of Directors of the India Company.

The year 1850 and spring of 1851 were spent in the Sikkim forests, the Khasia mountains, Cachar, Chittagong, and Sunderbunds; during all this time Dr. Thomson worked indefatigably, though he suffered constantly from gastric irritation and fever. He returned to England in March 1851, in very broken health, but laden with enormous collections and botanical and geological observations. Soon after his arrival in England, he began, at his own expense, the distribution of his herbarium amongst the principal Museums in Europe and America: while great efforts were being made by his friends, backed by a strong recommendation from the President and Council of the British Association, to induce the Court of Directors of the East India Company to grant him some aid towards this work, as well as towards publishing an account of his labours, either by allowing the time of his furlough to count as service, or otherwise; but it was all in vain. Whilst thousands were being expended by the Company on foreigners (the brothers Schlagintweit), who were actually travelling over the same ground that Thomson had explored, the utmost that could be extorted for the latter was a promise that when the first volume of the 'Flora of British India' (which he proposed to publish in conjunction with his fellow-traveller) should appear, his services should be favourably considered. Under these circumstances the work was commenced, the first volume was printed wholly at Dr. Thomson's expense, and sold at cost price. On application for the promised "consideration of his services," he was informed that the Honourable Company had bought some copies of the volume, and that nothing more was to be expected! The work, which embodied a marvellous amount of Thomson's valuable observations, especially on the morphology of Indian plants, together with a conspectus of the physical and botanical geography of every district of India, from Tibet to Cape Comorin and the Malay Peninsula, had consequently to be abandoned.

On the retirement of Dr. Falconer from the superintendence of the Botanic Gardens at Calcutta, in 1854, the appointment was given to Dr. Thomson, who held it in conjunction with that of Professor of Botany at the Calcutta Medical College. During all this second residence in India he suffered from repeated attacks of



fever and aggravated dyspepsia, which obliged him to repair sometimes to the Sanatorium at Darjeeling, and at others to the sea. Finally, in 1861, he returned to England a confirmed invalid.

For the remainder of his life Dr. Thomson resided first at Kew, and subsequently at Maidstone, making, however, frequent changes for the benefit of his health. On one occasion, indeed, he again went to India for a short period, namely, on that of the eclipse of 1871, when he was employed as secretary to the Expedition, and when his knowledge of the country and languages was of the greatest use to its members.

The last few months of his life were spent in London, where he died, after protracted sufferings from malignant disease, on the 18th of April, 1878.

Dr. Thomson was elected a Fellow of the Linnean Society in 1852, of the Royal in 1855, and of the Royal Geographical in 1854. He was for twelve years an Examiner in Natural Science for the Medical Services of the Army and Navy, and, on several occasions, Examiner in Botany of the University of London and the South Kensington School of Science.

From his youth till he was disabled by disease he was remarkable for his bodily activity and powers of endurance; he was an excellent mountaineer, and a daring cragsman.

Though capable of great mental exertion, and possessed of a vast amount of singularly accurate botanical knowledge, he was ever diffident of his powers and morbidly averse to publication. At the same time he was of a most amiable disposition, and obliging to a fault, his time, substance, and stores of information being at the disposal of all comers. He was a great reader and good linguist, and, when imprisoned at Ghuznee, having no other books than a Persian Dictionary and a copy of Lyell's 'Principles of Geology,' he managed with the former and the aid of his gaoler to make himself master of Persian, varying his studies with chapters of the latter work, which, during his imprisonment, he read through *verbatim* seven times. Dr. Thomson married, in 1854, Catharine, daughter of R. C. Seonce, Esq., of Malta, who survives him. He left no family.

J. D. H.

